

University of Alaska Anchorage
School of Education
3211 Providence Drive
Anchorage, Alaska 99508-8269

ED 576
Professional Learning in Science Education:
Yoga in Denali

1 Credit, Graded P/NP

Summer 2026

Course Sponsor: Alaska Geographic, Murie Science and Learning Center, Denali National Park

Instructor: Mila Cooper

Educational Resource: Paula Davis

Primary Grading Instructor: Jessica Brillhart

Facilitating Instructor: Jessica Brillhart

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Course Meeting Information

Location: Murie Science and Learning Center, Denali National Park & Preserve entrance

Start and End Date: June 22 – 24, 2026

Class Day(s) & Time(s): June 22nd 6:30pm through July 24th, 4pm, continuous residential course

Final Project Due: Final day of course

Course Description: The Sanskrit term yuj, from which the word yoga is derived, is usually translated as “union” or “linking.” This joining of inner and outer is the focus of this course. The grand landscape of Denali invites the soul to remember the most cherished relationships and “links” in life. Through breathing practices, sequences of asanas (physical postures), and meditation in nature, participants will build a deeper understanding and connection to Denali as they become stronger in body and spirit. Participants will be inspired to incorporate stewardship of natural places into daily life and practice. Participants will consider how to integrate their learning from this fieldwork course into their teaching or educational environments.

Intended Audience: Teachers and other interested educators

Enrollment Restrictions: None

Course Prerequisite/Co-requisites: None

Course Design:

- a. Requires 15 contact hours and approximately 30 hours of engaged learning.
- b. Does not apply to any UAA certificate or degree program.
- c. No UAA lab and/or materials fees beyond standard charges.
- d. This Murie Science and Learning Center course will be entirely field-based. Learning will be achieved through lectures, group discussions, field observations, and field activities. This course is based upon the collegial sharing, collaboration, and support of the participants and facilitator as a community of learners. Course activities will include common readings and group discussions, collective learning processes, peer coaching/mentoring, and reflective practices.

Instructional Goals and Defined Outcomes:

RESEARCH BASED THEORY/PRINCIPLES/PRACTICES/TRENDS (CONTENT)

1.0 Instructional Goal:

The instructor will introduce the basics of a daily yoga practice encompassing a sequence of asana (physical postures), body alignment principles, breathing techniques, and preparation for meditation.

Defined Outcomes:

Participants will demonstrate an understanding of basic physical posture and alignment, breathing techniques, and preparation for meditation.

2.0 Instructional Goal:

The instructor will present an initiatory opening to the course by inviting participants to acknowledge the land, its people throughout the ages, and its continued historical, biodiversity and cultural significance. The instructor will introduce the practice of establishing connection to landscape by meditating and asking permission, and to body by setting clear intentions and observing safe self-examination principles.

Defined Outcomes:

Participants will establish an understanding of the significance of approaching wilderness with humbleness and permission, and setting intentions for yoga practice.

3.0 Instructional Goal:

The instructor will define and elaborate on a better understanding of yogic concepts drawing from ancient recorded yogic scripture.

Defined Outcomes:

Participants will demonstrate depth of understanding of yogic concepts based on authentic historical records.

4.0 Instructional Goal:

The instructor will guide participants in identifying pertinent and practical ways to implement the knowledge and practices introduced throughout the course, both in their personal lives and academic environments. This includes benefits, potential challenges, and a long-term perspective on the evolution of such practices over time.

Defined Outcomes:

Participants will become equipped with foundational knowledge of how to organize and shape their personal practice, as well as share it in a limited capacity in an academic environment.

THEORY INTO PRACTICE (APPLICATION)

2.0 Instructional Goal:

The instructor will introduce the practice of yoga asana, breathing techniques, energy conservation, posture alignment, and preparation for meditation; primarily in outdoor wilderness settings.

Defined Outcomes:

- 2.1. Participants will attempt and learn to establish connection to body and landscape through exposure to and participation in a foundational yoga practice led in nature.
- 2.2. Participants will describe how they will integrate their experiences into their teaching or educational environments.

REFLECTION ON THEORY INTO PRACTICE (REFLECTION)

3.0 Instructional Goal:

Engage participants in discussions, reflective journaling and informal sharing about science instruction and how to incorporate gained knowledge and experience into their classrooms.

Defined Outcome:

Participants will review and reflect upon the scientific information covered. Participants will complete a journal, reflecting on how the information can be shared with their students.

RELATIONSHIP TO STANDARDS

4.0 Instructional Goal:

Familiarize participants with science content standards addressed by the strategies and concepts presented.

Defined Outcome:

Participants will identify the Science-Content standards applicable to their classroom.

Writing Style Requirements:

Participants' writing will reflect the clarity, conciseness, and creativity expected of post-baccalaureate certificated educators.

Attendance and Make-up Policy:

Participants are expected to actively participate in all classes as a contributing member of a learning community. Attendance is mandatory, and due to the ongoing field-based nature of this course, make-up work is not possible.

Course Assignments, Assessment of Learning, and Grading System:

Course grading will be Pass/No Pass based upon the following:

- a. Participation 50%
Participants will be expected to actively and collegially participate in discussions, activities, and other process experiences during the seminar.
- b. Final Project - Journal completion 50%

Participants will complete journal assignments to be turned in to MSLC field guide on the last day of class. Assignments will include thoughtful reflection based upon seminar experience and an application plan of how participants will integrate issues and content discussed into their own classroom setting.

Quality of Work

Grade of "Pass"

Passing work includes all components of the assignment and meets proficient criteria. It is focused, developed, supported, logical, and acceptable work with minimal errors. Work of this quality indicates understanding of key concepts and knowledge base.

Grade of "No Pass"

Work graded "No Pass" may lack key criteria/components of the task and show little or no evidence of conceptual understanding or knowledge utilization. Work may also show minimal or no organization/development and/or clear focus (may be difficult to follow) and may contain numerous errors. This grade indicates minimal or no knowledge or concept development. It may also mean that work was not attempted.

Course Calendar/Schedule:

Monday	6:00 p.m. – 6:30 p.m.	Greeting and check in at MSLC
	6:30 p.m. – 7:30 p.m.	Introduction, orientation & overview - o opening meditation - o significance of establishing and nurturing connection to body and landscapes - o self-examination and nature observation - o approaching practice in a safe and comfortable way - o intention setting and permission asking
	7:30 p.m. – 9:00 p.m.	Drive to MSLC Field Camp and settle in
Tuesday	7:00 a.m. – 8:30 a.m.	Morning Practice o asana practice, alignment principles and breathing exercises
	9:00 a.m. – 9:30 a.m.	Breakfast
	10:00 a.m. – 5:00 p.m.	Exploration of Denali - o 5 to 6-hour hike with application of breathing foundations - o Meditation session
	6:00 p.m. – 8:00 p.m.	Dinner and evening discussions - o Discussion of Yoga Sutras and yogic concepts - o Breathing/Meditation - o Teacher study group to discuss the day's activities and how the information can be shared with students - o Identify applicable science content standards addressed by course content
Wednesday	7:00 a.m. – 8:30 a.m.	Morning Practice o asana practice, alignment principles and breathing exercises
	9:00 a.m. – 9:30 a.m.	Breakfast

10:00 a.m. – 3:00 p.m. Continued exploration of Denali

- Continued study of practice foundations and application principles

3:00 p.m. – 4:00 p.m. Return drive to MSLC

Final Project Due: last day of course

Course Texts, Readings, Handouts, and Library Reserve:

Suggested Text/Material:

Chaitanya, S., Datta, A., Bhandari, B., & Sharma, V. K. (2022). *Effect of Resonance Breathing on Heart Rate Variability and Cognitive Functions in Young Adults: A Randomised Controlled Study*. *Cureus*, 14(2), e22187. Retrieved from: <https://doi.org/10.7759/cureus.22187>

Desikachar, T.K.V. (1999). *The Heart of Yoga: How to Develop a Personal Practice*. Inner Traditions.

Jung, J. Y., & Kang, C. K. (2021). *Investigation on the Effect of Oral Breathing on Cognitive Activity Using Functional Brain Imaging*. *Healthcare* (Basel, Switzerland), 9(6), 645. Retrieved from: <https://doi.org/10.3390/healthcare9060645>

Matko, K., Sedlmeier, P., & Bringmann, H. C. (2022). *Embodied Cognition in Meditation, Yoga, and Ethics—An Experimental Single-Case Study on the Differential Effects of Four Mind–Body Treatments*. *International Journal of Environmental Research and Public Health*, 19(18), 11734. Retrieved from: <https://doi.org/10.3390/ijerph191811734>

Price, A., & Eccles, R. (2016). *Nasal airflow and brain activity: is there a link?* *The Journal of laryngology and otology*, 130(9), 794–799. Retrieved from: <https://doi.org/10.1017/S0022215116008537>

Saraswati, S.S. (1976, 2013). *Four Chapters on Freedom*. Yoga Publications Trust.
Note: Focus on the first chapter, Samadhi Pada.

Smith, J. A., Greer, T., Sheets, T., & Watson, S. (2011). *Is there more to yoga than exercise?* *Alternative therapies in health and medicine*, 17(3), 22–29.

Stern, E. (2022). *One Simple Thing: A New Look at the Science of Yoga and How It Can Transform Your Life*. North Point Press.

Swenson, D. (1999) *Ashtanga Yoga - The Practice Manual*. Ashtanga Yoga Productions.

Yogananda, P. (1998). *Autobiography of a Yogi*. Self-Realization Fellowship.

Yongey, M.R., Swanson, E. (2007). *The Joy of Living: Unlocking the Secret and Science of Happiness*. Harmony.

Zaccaro, A., Piarulli, A., Laurino, M., Garbella, E., Menicucci, D., Neri, B., & Gemignani, A. (2018). *How Breath-Control Can Change Your Life: A Systematic Review on Psycho-Physiological Correlates of Slow Breathing*. *Frontiers in human neuroscience*, 12, 353. Retrieved from: <https://doi.org/10.3389/fnhum.2018.00353>

Content References:

International Journal of Yoga for current research (n.d.) Retrieved from: <https://journals.lww.com/ijoy/pages/default.aspx>

Maehle, G. (2012). *Pranayama The Breath of Yoga*. Kaivalya Publications

Malhotra, V., Srivastava, R., Parasuraman, P., Javed, D., Wakode, S., Thakare, A., Sampath, A., & Kumari, A. (2022). *Immediate autonomic changes during right nostril breathing and left nostril breathing in regular yoga practitioners*. *Journal of Education and Health Promotion*, 11, 280. Retrieved from: https://doi.org/10.4103/jehp.jehp_343_22

Telles, S., Nagarathna, R., & Nagendra, H. R. (1994). *Breathing through a particular nostril can alter metabolism and autonomic activities*. *Indian Journal of Physiology and Pharmacology*, 38(2), 133–137. Retrieved from: <https://pubmed.ncbi.nlm.nih.gov/8063359/>

Vivekananda, S. (2019). *The Complete Book of Yoga: Karma Yoga~Bhakti yoga~Raja Yoga~Jnana Yoga*. Fingerprint! Publishing.

Vivekananda, S. (2017). *The Four Paths of Yoga: Jnana Yoga, Raja Yoga, Karma Yoga, Bhakti Yoga*. Discovery Publisher.

Vivekananda, S. (2019). *Patanjali Yoga Sutras: Remarks on Yoga Philosophy (1896)*.

Zelano, C., Jiang, H., Zhou, G., Arora, N., Schuele, S., Rosenow, J., & Gottfried, J. A. (2016). *Nasal Respiration Entrain Human Limbic Oscillations and Modulates Cognitive Function*. *The Journal of Neuroscience*, 36(49), 12448–12467. Retrieved from: <https://doi.org/10.1523/JNEUROSCI.2586-16.2016>

Standards References:

Alaska Comprehensive Center. (2012). *Guide to Implementing the Alaska Cultural Standards for Educators*. Juneau, AK: Alaska Department of Education and Early Development. Retrieved from: <https://education.alaska.gov/standards/cultural>

Alaska Native Knowledge Network. (1998). *Alaska standards for culturally responsive schools*. Fairbanks, AK: University of Alaska Press. Retrieved from: <http://www.ankn.uaf.edu/publications/culturalstandards.pdf>

National Research Council, the National Science Teachers Association, the American Association for the Advancement of Science, and Achieve. (2013). *The next generation science standards*. Retrieved from <http://www.nextgenscience.org/next-generation-science-standards>.

State of Alaska Department of Education and Early Development. (2019). *Content and performance standards for Alaska students*. Juneau, AK: Author. Retrieved from: https://education.alaska.gov/akstandards/standards/Content_and_Performance_Standards_edited.pdf

State of Alaska Department of Education and Early Development. (2019). *K-12 Science Standards for Alaska*. Juneau, AK: Author. Retrieved from: <https://education.alaska.gov/akstandards/science/science-standards-for-alaska.pdf?v=1>

State of Alaska Department of Education and Early Development. (2012). *Alaska English/Language Arts and Math Standards*. Juneau, AK: Author. Retrieved from: https://education.alaska.gov/akstandards/standards/ELA_and_Math.pdf

Informed by the School of Education Vision, Mission, and Conceptual Framework:

We believe that the preparation and support of professional educators is the shared responsibility of the University of Alaska Anchorage and our partners, and that our programs must evolve dynamically in response to unique community needs, research, and continuous program assessment. This PACE course is designed to meet a professional development need in response to our partner school districts and professional organizations. The course fits within the mission of the UAA School of Education as we encourage lifelong learning to meet the challenges of a rapidly changing world.

Link to Alaska Educator Content and Performance Standards:

This professional development is rooted in the fundamentals of Alaska's standards for teachers, administrators, and beginning teachers in Alaska's Administrative Code, 4 AAC 04.200. It is offered to encourage and support practicing educators attain, maintain, or surpass the standards for effectively preparing today's students for successful lives and productive careers. (<https://education.alaska.gov/standards/other-standards>)

Learning Forward Standards for Professional Learning:

This course is further informed by the Learning Forward Standards for Professional Learning which outline the "characteristics of professional learning that leads to effective teaching practices, supportive leadership, and improved student results." As explicit in the standards, "professional learning is for educators to develop the knowledge, skills, practices and dispositions they need to help student perform at a higher levels." (<https://standards.learningforward.org>)

Course Policies:**Incomplete Grades**

Due to the nature of this course, grades of incomplete will not be permitted.

ADA Policy

The provision of equal opportunities for students who experience disabilities is a campus-wide responsibility and commitment. Disabilities Support Services (DSS) is the designated UAA department responsible for coordinating academic support services for students who experience disabilities. To access support services, students must contact DSS (786-4530 or 786-4536 TTY) and provide current disability documentation that supports the requested services. Disability support services are mandated by Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act (ADA) of 1990. Additional information may be accessed at the DSS Office in RH 105 or on-line at www.uaa.alaska.edu/dss.

Academic Dishonesty Policy

Academic integrity is a basic principle that requires all students to take credit only for the ideas and efforts that are their own. Cheating, plagiarism, and other forms of academic dishonesty are defined as the submission of materials in assignments, exams, or other academic work that is based on sources prohibited by the faculty member. Academic dishonesty is defined further in the "student Code of Conduct." In addition to any adverse academic action that may result from the academically dishonest behavior, the University specifically reserves the right to address and sanction the conduct involved through student judicial review procedures and the Academic Dispute Resolution Procedure specified in the University catalog.

Professional and Ethical Behavior

University of Alaska Anchorage School of Education students are expected to abide by the State of Alaska Code of Ethics of the Education Profession and professional teaching standards as they concern students, the public, and the profession. The standards, adopted by the Professional Teaching Practices Commission, govern all members of the teaching profession. A violation of the code of ethics and professional teaching standards are grounds for revocation or suspension of teaching certification.

Technology Integration

University of Alaska Anchorage School of Education students are expected to (a) demonstrate sound understanding of technology operations and concepts; (b) plan and design effective learning environments and experiences supported by technology; (c) implement curriculum plans that include technology applications in methods and strategies to maximize student learning; (d) facilitate a variety of effective assessment and evaluation strategies; (e) use technology to enhance productivity and professional practice; and (f) understand the social, ethical, and human issues surrounding use of technology in PreK-12 schools and apply those principles in practice.

Course Safety and Risk

This course is sponsored by Alaska Geographic and the Murie Science and Learning Center. The University of Alaska Anchorage provides the credit option for interested participants. This course takes place entirely outdoors and within a remote area of Alaska. Field courses, such as this, do have inherent risks. These risks will be outlined by the course instructors and in the Alaska Geographic Participant Release of Liability, Waiver of Claims, Assumption of Risks, and Indemnity Agreement form. This form will be provided at the time of registration and a signed copy is required in order to attend.

Non-Discrimination Policy

The University of Alaska is an affirmative action/equal opportunity employer and educational institution. The University of Alaska does not discriminate on the basis of race, religion, color, national origin, citizenship, age, sex, physical or mental disability, status as a protected veteran, marital status, changes in marital status, pregnancy, childbirth or related medical conditions, parenthood, sexual orientation, gender identity, political affiliation or belief, genetic information, or other legally protected status. The University's commitment to nondiscrimination, including against sex discrimination, applies to students, employees, and applicants for admission and employment. Contact information, applicable laws, and complaint procedures are included on UA's statement of nondiscrimination available at www.alaska.edu/nondiscrimination.